Guidelines on the management of chronic pain in children

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## ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACT</td>
<td>acceptance and commitment therapy</td>
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<tr>
<td>CBT</td>
<td>cognitive behavioural therapy</td>
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<tr>
<td>CERQual</td>
<td>Confidence in the Evidence from Reviews of Qualitative research</td>
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<td>ERG</td>
<td>External Review Group</td>
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<tr>
<td>GDG</td>
<td>Guideline Development Group</td>
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<tr>
<td>GRADE</td>
<td>Grading of Recommendations, Assessment, Development and Evaluation</td>
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<td>GRC</td>
<td>WHO Guidelines Review Committee</td>
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<tr>
<td>LMIC</td>
<td>low- and middle-income country</td>
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<tr>
<td>NSAIDS</td>
<td>non-steroidal anti-inflammatory drugs</td>
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<tr>
<td>QALY</td>
<td>quality-adjusted life-year</td>
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<tr>
<td>PT</td>
<td>physical therapy or physiotherapy</td>
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<tr>
<td>RCT</td>
<td>randomized controlled trial</td>
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<td>WHO</td>
<td>World Health Organization</td>
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GLOSSARY

**Adjuvant:** Medicines other than paracetamol, non-steroidal anti-inflammatory drugs (NSAIDs) and opioids that may help to relieve pain alone or in combination with paracetamol, NSAIDs or opioids. Typically, these adjuvant medicines are used for pain refractory to paracetamol, NSAIDs or opioids or when opioid therapy is contraindicated.

**Adolescents:** Young people between the ages of 10 and 19 years.

**Biopsychosocial model of pain:** The biopsychosocial model of pain recognizes pain as a complex multidimensional experience that is the result of the interaction of biological, psychological and social factors. This model provides a basis for the understanding and treatment of pain, taking into account the patient, their social context and the impact of illness on that individual from a societal perspective. Pain management thus requires a multimodal, interdisciplinary and integrated approach (adapted1–3).

**Children:** Persons aged 0 to 19 years of age.

**End-of-life care:** This is a type of palliative care for people in the final weeks or months of life. End-of-life care enables people to live as well as possible before death and to die with dignity. It includes social, psychological and spiritual support for the patient, family and caregivers.

**Evidence-to-decision frameworks:** These are tabular displays of relevant considerations which decision-makers use to make a decision or to formulate a recommendation.

**GRADE:** The Grading of Recommendations, Assessment, Development and Evaluation is a system for assessing the certainty (quality) of a body of evidence and for structuring considerations when formulating recommendations in clinical or public health guidelines.

**GRADE evidence tables or profiles:** These are tabular displays of summary measures of effect and GRADE certainty (quality) assessments of the body of evidence for a specific question (usually defined in population, intervention, comparator and outcome (PICO) format).

**Life-limiting conditions:** These are illnesses for which there is no cure and an early death is expected, but with which a person may continue to live for several more years.

**Opioid:** Substances produced in the body (endogenous opioids), derived from the opium poppy (semisynthetic opioids) or chemically synthesized (synthetic opioids) that act on opioid receptors in the central or peripheral nervous system and have the capacity to relieve pain or, in high doses, produce euphoria and respiratory depression.

**Opioid stewardship:** Opioid stewardship refers to a series of strategies and interventions involving the appropriate procurement, storage, prescribing and use

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of opioids, as well as the disposal of unused opioids when opioids are appropriately prescribed for the treatment and management of specific medical conditions. The goal of opioid stewardship is to protect and optimize individual and population health. Specifically, the goals are to ensure the rational use of opioids: meeting the needs of individuals who require pain control, while minimizing harms to the individual and to other persons and populations. These harms include those that may arise from opioid overuse, misuse and diversion.

The essential practices of opioid stewardship in children are fourfold:

- Opioids must only be used for appropriate indications and prescribed by trained providers, with careful assessments of the benefits and risks.
- The use of opioids by individuals, their impact on pain and their adverse effects must be continuously monitored and evaluated by trained providers.
- The prescribing provider must have a clear plan for the continuation, tapering or discontinuation of opioids according to the child’s condition. The child and family must be apprised of the plan and its rationale.
- There must be due attention to procurement, storage and the disposal of unused opioids.

**Palliative care:** This is an approach to care for persons, families and caregivers who are facing a life-limiting illness or where a person is near the end of life. The goal of palliative care is to improve the quality of life of patients and their families. This approach focuses on the prevention and relief of suffering by means of early identification, assessment and treatment of pain as well as addressing the physical, psychosocial and spiritual needs of the individual and their family and caregivers.

**Pain:** An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage.\(^4\)

**Acute pain:** Pain with a duration of less than 3 months.\(^4\)

**Chronic pain:** Pain that persists or recurs for longer than 3 months. Chronic pain is multifactorial: biological, psychological and social factors contribute to the pain syndrome. The 11\(^{th}\) revision of the International Classification of Diseases (ICD-11) categorizes chronic pain as follows: 1) chronic primary pain; 2) chronic cancer-related pain; 3) chronic postsurgical or post-traumatic pain; 4) chronic secondary musculoskeletal pain; 5) chronic secondary visceral pain; 6) chronic neuropathic pain; 7) chronic secondary headache or orofacial pain; or 8) chronic pain, unspecified.\(^4\)

**Chronic primary pain:** Chronic pain in one or more anatomical regions that is characterized by significant emotional distress (anxiety, anger/frustration or depressed mood) or functional disability (interference in daily life activities and reduced participation in social roles). Chronic primary pain is multifactorial: biological, psychological and social factors contribute to the pain syndrome. The diagnosis is appropriate independently of identified biological or psychological contributors unless another diagnosis would better account for the presenting symptoms.\(^4\)

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Executive Summary

Chronic pain in children is a significant public health problem globally and a leading cause of morbidity in children, with a negative impact on their emotional, physical and social development and function. The lives of families and caregivers are also significantly impacted. Chronic pain, defined as pain that persists or recurs for longer than three months, can be primary (independent of any identified biological or psychological contributing factor) or secondary to a clear, underlying etiology. Pain in children differs from that in adults for a number of physiological, developmental and social reasons, and thus data and research on, and clinical experiences with, adults may not be directly applicable to children.

The management of chronic pain in children is complex and challenging, and there is a paucity of high-quality research studies on treatment interventions and management approaches. Pain management requires an approach that is tailored to each individual and context, and is multimodal and interdisciplinary, requiring trained healthcare providers and a coordinated, comprehensive, integrated response.

In these guidelines, the World Health Organization (WHO) provides evidence-informed recommendations for the management of chronic pain in children. The recommendations are based on the most current, high-quality scientific evidence, and were formulated following processes and using methods that meet the highest international standards for guideline development. The recommendations in this guideline are based on systematic reviews of the evidence on benefits, harms, acceptability and feasibility, as well as on equity and resource considerations. The recommendations were formulated by the Guideline Development Group, consisting of individuals with diverse expertise and experiences and with global representation.

The purpose of this guideline is to assist WHO Member States and their partners in developing and implementing national and local policies, regulations, pain management protocols and best practices. It will help countries balance concerns about ensuring access to appropriate therapies for pain relief with the harms arising from misuse of medications and other potential adverse effects of interventions for pain management.

These guidelines focus on physical, psychological and pharmacological interventions for the management of primary and secondary chronic pain in children 0 to 19 years of age.

Guiding Principles

The Guideline Development Group agreed that several key principles underpin the recommendations and best practice statements in these guidelines, and more importantly, guide all aspects of the care of children with chronic pain.

1. Access to pain management is a fundamental human right.
2. Children have the right to enjoyment of the highest attainable standard of health.
3. Member States and healthcare providers should ensure that children, and their families and caregivers, know their rights to self-determination, non-discrimination, accessible and appropriate health services, and confidentiality.
RECOMMENDATIONS

1. In children with chronic pain, physical therapies may be used, either alone or in combination with other treatments (conditional recommendation, very low certainty evidence).

2. a) In children with chronic pain, psychological management through cognitive behavioural therapy and related interventions (acceptance and commitment therapy, behavioural therapy and relaxation therapy) may be used (conditional recommendation, moderate certainty evidence).
   b) Psychological therapy may be delivered either face-to-face or remotely, or using a combined approach (conditional recommendation, moderate certainty evidence).

3. In children with chronic pain, appropriate pharmacological management tailored to specific indications and conditions may be used (conditional recommendation, low certainty evidence).

4. a) Appropriate pharmacological management tailored to specific indications may include the use of morphine under the principles of opioid stewardship, for end-of-life-care (conditional recommendation, very low certainty evidence).
   b) In children with chronic pain associated with life-limiting conditions, morphine may be given by appropriately trained healthcare providers, under the principles of opioid stewardship (conditional recommendation, very low certainty evidence).

BEST PRACTICES FOR THE CLINICAL MANAGEMENT OF CHRONIC PAIN IN CHILDREN

The Guideline Development Group also formulated several statements which represent best practice for the clinical management of chronic pain in children. These statements apply to all aspects of the clinical care of a child with chronic pain, including the planning, implementation and delivery of physical, psychological and pharmacological interventions.

1. Children with chronic pain and their families and caregivers must be cared for from a biopsychosocial perspective; pain should not be treated simply as a biomedical problem.

2. A comprehensive biopsychosocial assessment is essential to inform pain management and planning. As a component of this assessment, healthcare providers should use age-, context- and culturally appropriate tools to screen for, and monitor, pain intensity and its impact on the quality of life of the child and family.

3. Children with chronic pain must have a thorough evaluation of any underlying conditions and access to appropriate treatment for those conditions, in addition to appropriate interventions for the management of pain. Chronic pain in childhood often exists with comorbid conditions affecting the child’s health, and social and emotional well-being, which require concurrent management.
4. Children presenting with chronic pain should be assessed by healthcare providers who are skilled and experienced in the evaluation, diagnosis and management of chronic pain.

5. Management, whether with physical therapies, psychological or pharmacological interventions, or combinations thereof, should be tailored to the child’s health; underlying condition; developmental age; physical, language and cognitive abilities; and social and emotional needs.

6. Care of children with chronic pain should be child- and family-centred. That is, the child’s care should:
   i. focus on, and be organized around, the health needs, preferences and expectations of the child, and their families and communities;
   ii. be tailored to the family’s values, culture, preferences and resources; and
   iii. promote engagement and support children and their families to play an active role in care through informed and shared decision-making.

7. Families and caregivers must receive timely and accurate information. Shared decision-making and clear communication are essential to good clinical care. Communication with patients should correspond to their cognitive, development and language abilities. There must be adequate time in a comfortable space for discussions and questions regarding care management plans and progress.

8. The child and their family and caregivers should be treated in a comprehensive and integrated manner: all aspects of the child’s development and well-being must be attended to, including their cognitive, emotional and physical health. Moreover, the child’s educational, cultural and social needs and goals must be addressed as part of the care management plan.

9. In children with chronic pain, an interdisciplinary, multimodal approach should be adopted which is tailored to the needs and desires of the child, family and caregivers, and to available resources. The biopsychosocial model of pain supports the use of multiple modalities to address the management of chronic pain.

10. Policy-makers, programme managers and healthcare providers, as well as families and caregivers must attend to opioid stewardship to ensure the rational and cautious use of opioids. The essential practices of opioid stewardship in children include:
   i. Opioids must only be used for appropriate indications and prescribed by trained providers, with careful assessments of the benefits and risks. The use of opioids by individuals, their impact on pain and their adverse effects must be continuously monitored and evaluated by trained providers.
   ii. The prescribing provider must have a clear plan for the continuation, tapering or discontinuation of opioids according to the child’s condition. The child and family must be apprised of the plan and its rationale.
   iii. There must be due attention to procurement, storage and the disposal of unused opioids.
UPTAKE AND IMPLEMENTATION

When planning to implement the recommendations in these guidelines, Member States and other end-users need to ensure that the necessary policies, regulations, infrastructure and personnel are in place to provide accessible, high-quality health services for children with chronic pain. In addition, there are a number of important considerations for end-users as they implement these recommendations.

NATIONAL HEALTH POLICIES TO ENSURE ACCESS TO A RANGE OF TREATMENT OPTIONS

It is important that Member States’ national policies and regulations ensure wide and equitable access to appropriate and high-quality services for children with chronic pain. Treatment costs and bureaucratic processes must not preclude or discourage equitable access to appropriate therapies. Health services for chronic pain are an essential part of universal health coverage (UHC) for children. National packages of essential services must be accompanied by an appropriate budget allocation and include the range of therapies recommended in these guidelines, as well as access to specialist providers and referral services, when indicated. It is not sufficient to include only some of the treatment modalities under UHC, for instance, pharmacological interventions, as this may lead to unintended consequences such as a singular focus on medicines which could place children and families at risk of overreliance and problematic use. In addition, pharmacological therapy is likely to be less effective without appropriate attention to physical and psychological therapies as part of the biopsychosocial model of care. Finally, families may seek other treatments which are not evidence-based: this has economic consequences for the family and carries the potential for adverse events.

The WHO Model Lists of Essential Medicines and the WHO Essential Medicines List for Children include an appropriate range of medicines for treating pain in children. The United Nations Committee on Economic, Social and Cultural Rights considers that the right to health requires countries to ensure access to medicines included on the WHO model list.5 As a central part of national medicines policies, the WHO model lists can be adapted by countries and serve as a guide for national lists6 to ensure access to quality medicines and their rational use. A core strategy for rational use of medicines is the education and training of healthcare providers on key policies that affect quality, supply, use and disposal of medicines. Healthcare providers should have adequate protection and support such that they can discharge their duties related to the handling of controlled medicines including opioids.

CAPACITY STRENGTHENING

In order to achieve optimal access to effective and cost-effective services for children with chronic pain and their families, significant strengthening of capacity may be


6. Cochrane Pain, Palliative and Supportive Care, Fisher E et al. A systematic review on effectiveness and safety of pharmacological, physical and psychological interventions for the management of chronic pain in children. September 2020.(see annex 2-6)
needed, particularly in low- and middle-income countries. Capacity is needed both in terms of healthcare providers and in health systems capable of delivering high-quality, recommended services. Training of healthcare providers in chronic pain management in children may need to be augmented. This includes education and training at the undergraduate and post-graduate levels, and in continuing education curricula, and applies across the range of providers involved in caring for these children. Such training should encompass a broad range of topics, including the assessment of pain, other symptoms and treatment responses; tools used for these assessments; treatment modalities; screening for and treatment of the adverse effects of interventions; and communication and support strategies for children and their families.

In order to effectively deliver care for chronic pain in children, healthcare workers must fully understand the biopsychosocial model of pain management to a level commensurate with the provider’s role and responsibilities in children’s care. In some settings, this may require a significant change in the culture and attitudes of providers, as well as additional training.

Given the importance of clear, accurate and comprehensive communication among the various healthcare providers involved in a child’s care, providers must be trained and continuously work to improve their communication skills with the child, and their family and caregivers. Providers must be comfortable with shared decision-making and approaches to support and empower patients and their families. This may require additional training and support networks to ensure these skills.

In view of the multimodal and multidisciplinary approaches to chronic pain management, providers must be aware of the range of management options available, and have a level of knowledge tailored to their specific role. Providers must have basic knowledge of physical and psychological therapies, how to optimally monitor progress and adverse effects, and when treatments require modification or discontinuation. Likewise, providers need to have an understanding of the medicines used for the management of pain in children, their appropriate use, potential adverse effects and monitoring thereof, and the principles of opioid stewardship, including when and how to discontinue these medicines. In addition, providers need to know when children might benefit from referral to specialist or other services.

Specialized referral services and networks may need to be established to ensure that interdisciplinary, multimodal, integrated therapies are delivered as indicated. Novel models may be needed, such as task-shifting and virtual consultations with providers and care teams.

**OPTIMIZING INTERVENTIONS FOR CHRONIC PAIN**

There are a number of important considerations with regards to the implementation of interventions for chronic pain in children in order to optimize care, outcomes and the use of resources.

An early step in the management of chronic pain should involve education of the patient, family and caregivers about the biopsychosocial nature of pain. Explanations should be tailored to the concerns and questions of the child and family. Communication aids such as metaphors, booklets and web resources should be selected to match the learning style and preferences of children and their caregivers.
The management of chronic pain should also include the establishment of goals, set collaboratively and according to their abilities by the child, family, caregivers and the relevant healthcare providers. Setting goals helps the child to achieve the highest obtainable quality of life and promote their ability to do and be what they value or have reason to value.

The feasibility of delivering any intervention for chronic pain management in children may vary across settings. Feasibility is generally related to ease of access, mode of delivery, family resources, degree of parental support and the burden (time, inconvenience and cost). Healthcare providers must consider all these aspects of feasibility as they work with the child and family.

The social and educational context of children with chronic pain is critically important as interventions are planned and implemented. Support for families and children can be based in the home and community, and engage not only health professionals, but school and social services. Care should be delivered as close to home as possible, and in the child and family’s preferred location. As far as feasible, care pathways should revolve around the child’s and family’s schedules and education timetables. This will help to avoid taking the child away from routine physical and social environments, which would otherwise increase the burden placed on them and their family.

As a chronic condition, attention must be given to the maintenance and sustainability of the intervention, and its long-term outcomes. Although research evidence is lacking, healthcare providers and other persons involved in the care of these children should be continually seeking approaches which sustain and augment care and positive outcomes. These include reassessing disease status and pain control using validated tools appropriate to the child’s age, developmental status, mode of communication and culture. “Booster sessions” for effective interventions can be used to enhance outcomes over the long term.

As children age and their capabilities, decision-making capacity, views, interests and activities change, care teams must ensure that appropriately tailored services evolve to meet the child’s needs. The adolescent’s care team must facilitate a smooth transition from child to adult services.